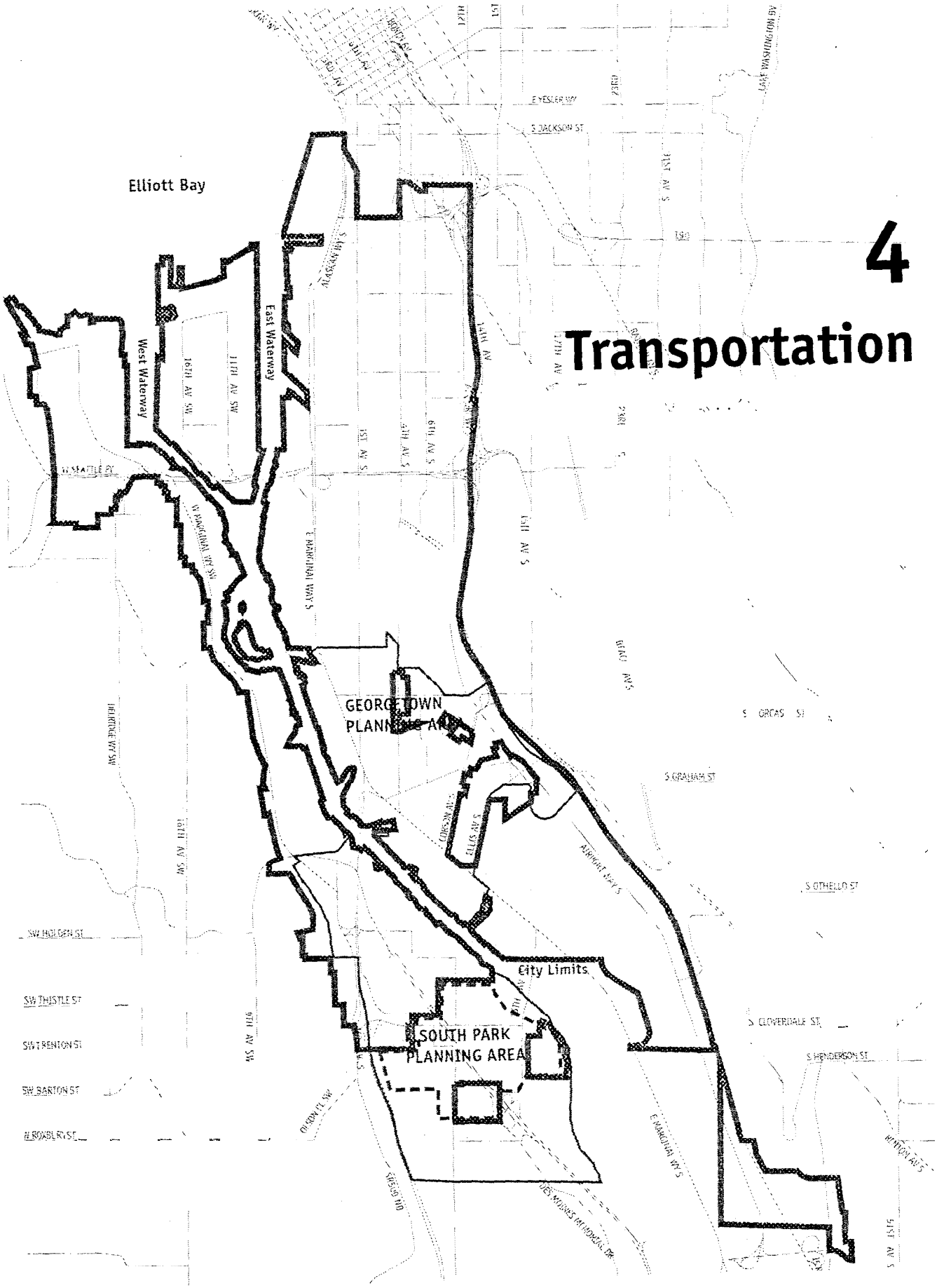
4

Transportation

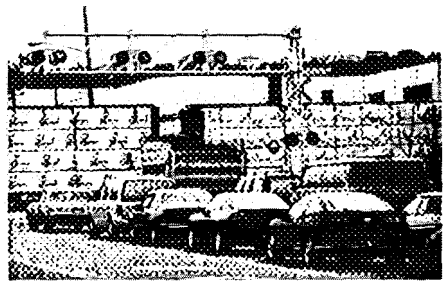


Transportation

Introduction

Role of the M and I Center

The Greater Duwamish Manufacturing and Industrial (M and I) Center is a vital international trade and transportation crossroads, receiving and distributing goods via roadway, water, rail and air. It is home to the Port of Seattle's primary shipping operations, the main Amtrak and freight rail yards for Washington State and the intersection of major interstate highway routes. Commerce generated throughout the United States and Canada moves through the area on its way to and from Alaska and countries throughout the Pacific Rim. The transportation system within the M and I Center plays a crucial role in the movement of these goods and services and holds economic implications for the entire state and Pacific Northwest region. An efficient transportation system is imperative to maintain the economic viability of regional businesses and sustain Puget Sound's family-wage industrial job base.



In addition to the significance of this district as a regional and international trade center, most local businesses rely on the available land-base and transportation facilities to manufacture, distribute, and store goods and provide services for the Puget Sound region and greater Western Washington. Over 70 percent of the total employment base within the district is generated by small businesses. As such, the local transportation needs of small industrial properties within the area weigh heavily in the development of long-range transportation solutions and land-use decisions for the M and I Center and its regional arterial connections.

The importance of transportation and trade distribution within the planning area can be measured as well; 21 percent of all City of Seattle B & 0 tax and four percent of City of Seattle property tax revenue is generated within the Duwamish M and I Center. This fact is too often ignored when decisions are made regarding the investment of public dollars for transportation infrastructure, or in the consideration of major land-use decisions. Recent decisions have increased the influx of incompatible uses and seriously strained the viability of industrial businesses. Construction of the new sports facilities has generated complex transportation issues with regard to traffic flow involving freight mobility, business access, parking and east-west transit within the Duwamish area. These projects have assumed higher priority than desperately needed transportation infrastructure improvements in the M and I Center.

One of the most difficult challenges facing the Greater Duwamish Manufacturing and Industrial Center is the cumulative impacts of the numerous major construction projects in progress throughout the area. Significant decisions drastically impacting the M and I Center are being made in a short period of time. Lack of coordination among the various projects, their timing, design process and implementation have made it extremely difficult for industrial business, property owners, and concerned citizens to react and respond adequately. Additional issues within this complex area of

Seattle include competing demands for available transportation facilities, modal conflicts, conflicting land uses and the conversion of land to nonindustrial uses.

Existing Conditions

Competing Demand for Available Transportation Capacity

While a high demand is placed on distributing goods and services within the area, additional capacity for other transportation needs.within and throughout the M and I center competes for space on limited arterial facilities. Commuter travel through the district, as well as traffic destined for the freeway system and ferry terminal, make east-west movement through the area highly congested throughout the workweek. In addition, recently approved special event centers in the north Duwamish area will aggravate this existing congestion and displace valuable parking access for local businesses more frequently. The plan attempts to address each of these competing transportation needs in a comprehensive manner by suggesting alternative methods for improving commuter travel, increasing access to under-utilized corridors, and accommodating special event facilities while minimizing their impacts in the north Duwamish and Georgetown areas.

Modal Conflicts

Coupled with the limited number of regional arterial connections through this complex district, a continual barrage of conflicting modal interfaces and systems conflicts disrupt and impact travel times of people and goods. While many of these conflicts are obvious (i.e., at-grade rail crossings), modal issues related to accommodating truck movements in the context of general purpose traffic, pedestrian and bicycle facilities within the district, special event traffic, and constructing appropriate new facilities with local and regional circulation as the major goal are each addressed in this element.

Cumulative Impacts of Large Projects

While there are many major transportation improvements and land use actions planned and proposed in the study area, many of these projects have not considered the cumulative effect these decisions will have on the transportation system as a whole. As an example, phases 1 and 2 of the SR 519 project, the Spokane Viaduct widening, the new sports stadiums and exhibition center, sidewalk widening, Ring County-Metro route consolidation, and proposed ramps to the Alaskan Way viaduct will have a profound affect on circulation, access, congestion, and the capacity of the 1st Avenue S corridor between Spokane Street and Jackson. Cumulative impacts of these major infrastructure investments and significant changes in land use were considered in developing this long range transportation improvement plan for the M and I Center.

To address cumulative impacts to 1st Avenue S and many other transportation facilities within the district, careful thought and consideration were given by the Greater Duwamish Planning Committee (GDPC) Transportation Subcommittee, to the evaluation of transportation investment strategies. Many larger projects were separated into distinct components that had a greater impact or benefit to circulation and access to the area. Conse-

quently, critical components of transportation investment were weighed against beneficial criteria established to address the concerns of the M and I Center.

Improvement of Exiting Facilities

A majority of the land within the center was created through significant earthwork and "fill" during the early days of the City. As such, many subsurface issues remain in terms of accommodating heavy vehicles on arterial and non-arterial roadways with substandard pavement substructure and poor surface water drainage conditions. Much of these conditions exist on non-arterial roadways which are not funded or maintained through regular City programs. Consequently, roadway improvement strategies to fund roadway rehabilitation and drainage deficiencies on non-arterial local access roads, as well as developing maintenance programs and new design standards, are important recommendations of the M and I Center Plan. These strategies give freight mobility access and circulation within the district highest priority among the recommendations.

Potential ***Solutions***

In addition to the following capital projects and operational changes recommended, other creative solutions are available to deal with many of the challenges. For instance, while high-cost road improvements are necessary to address freight-related traffic congestion, some improvements could be achieved much more quickly, and at much less expense, through effective use of Intelligent Transportation Systems (ITS) technology. ITS refers to a wide range of information tools that can be used to base traffic management systems on real-time information about existing and pending traffic conditions. This technology could be highly effective in dealing with the intermodal traffic conflicts in the Duwamish involving cars and trucks with rail and maritime shipping operations that are fairly predictable.

SEATRAN developed a Duwamish ITS proposal in 1998 that would link traffic control systems at 90 intersections for a cost of about $5 million. The city should take a leading role in funding and implementing such a system in partnership with regional, state and federal agencies, and the private sector.

Goals and Strategies

This section identifies transportation goals and strategies recommended by the Greater Duwamish Planning Committee to guide the future development of transportation infrastructure within the M and I center. Given the 20-year planning horizon of this effort, some of the goals and individual strategies developed below may not be consistent or relevant to conditions in the short term. However, the GDPC wants to guarantee the successful implementation of its long term vision by ensuring that general mobility and freight movement are not compromised by a lack of strategic planning on transportation or land use decisions. A number of governmental agencies as well as private business and other stakeholders were consulted in developing these strategies. This list includes the City of Seattle, the Washington State Department of Transportation, the Port of Seattle, King

County-Metro, Sound Transit, local business and property owners, residents and adjacent neighborhoods, and other stakeholder groups within the M and I Center.

The intent of the Plan is to accommodate all modes and user groups within the study area. As such, general goals have been divided into key strategies to address specific features of the transportation system in the M and I Center, and to consider specific modes of transportation important to the continued success of freight mobility within and through the area.

*Goal **T1:** Improve General Mobility and Access.*

Pol. T 1.1 Improve signal coordination to enhance mobility for both north-south and east-west traffic flow. Employ the use of protected plus permitted phasing to minimize delay for left turn movements on major corridors.

Pol. T 1.2 Maintain and improve area-wide access throughout the M and I Center through the use of signal coordination, roadway channelization, grade separation, elimination of modal conflicts, and pavement rehabilitation to the existing roadway system.

Pol. T 1.3 Discourage commuter through-traffic on 1st Avenue S and 4th Avenue S through access improvements to alternative corridors such as Airport Way and SR 99.

Pol. T 1.4 Maximize use of existing roadway infrastructure and maintain existing capacity through channelization and roadway improvements that improve access to under-utilized facilities.

Pol. T 1.5 Maintain the South Park Bridge (14th Street S/16th Street S) as a critical arterial link across the Duwamish Waterway and between the South Park neighborhood and regional transportation corridors and maintain the ability to remain operable to accommodate marine traffic.

Pol. T 1.6 Maintain vehicular capacity of existing roadways and bridges.

Pol. T 1.7 No at-grade arterial/rail crossings should be closed without constructing appropriate grade separations.

*Goal **T2:** Eliminate Conflicts Between Modes.*

Poi. T 2.1 Grade separate major east-west corridors within the M and I Center to reduce and/or eliminate conflicts between vehicular and rail modes to improve safety and mobility for pedestrians, bicycles, vehicles and trucks.

Pol. T 2.2 Retrofit bicycle and pedestrian facilities through the Duwamish to minimize conflicts between bicycles, pedestrians, trucks, and general traffic.

*Goal **T3:** Maintain and Improve Freight Mobility within the M and I Center.*

Pol. T 3.1 Maintain and improve east-west mobility throughout the area, particularly along three major east-west corridors for moving freight and goods: Royal Brougham Way (SR 519), Spokane Street, and Michigan Street.

Pol. T 3.2 Improve designated truck routes and roadways within the M and I Center to maintain efficient movement of freight.

Pol. T 3.3 Maintain reasonable access to regional transportation facilities (such as the Spokane Street Viaduct) for goods and service distribution from all areas of the M and I Center.

Pol. T 3.4 Develop truck standards and policies for efficient movement of freight.

Pol. T 3.5 Improve turning radii for truck movements at key intersections and along key corridors to enhance freight mobility.

Pol. T 3.6 Maintain and enhance intermodal freight connections between the State highway system, rail yards, barge terminals, Port terminals and facilities, airports, and warehouse/ distribution centers.

Pol. T 3.7 Design and schedule construction of transportation projects so that disruption to mobility within the M and I Center is minimized.

Pol. T 3.8 Coordinate roadway repairs with the City of Seattle Transportation Department (SEATRAN) so that priority is given to those facilities that are critical to freight mobility.

Goal T4: Preserve Existing Facilities and Construct Appropriate New Facilities.

Pol. T 4.1 Existing City policies address only arterial roadways within the district. As such the City, in cooperation with property and business owners in the area, should develop funding sources for rehabilitation and drainage improvements on non-arterial, local access roads.

Pol. T 42 Identify and mitigate the cumulative impacts of transportation projects.

Pol. T 4.3 Apply design standards for freight systems and inter-modal connections appropriate for use during the repair or construction of designated freight corridors.

Goal T5: Minimize *Impacts of Special* Events.

Pol. T 5.1 Maximize the use of the E-3 busway to expedite the movement of event patrons into and out of the M and I Center.

Pol. T 5.2 Encourage prepaid event parking to minimize vehicle congestion in the stadium and exhibition center vicinity.

Pol. T 5.3 Encourage the use of remote parking and shifting event attendees onto existing and future public transportation services.

Pol. T 5.4 Maintain priority parking for local businesses during special events.

Pol. T 5.5 Maintain employee and customer mobility throughout the M and I Center in general, and particularly in the vicinity of special event centers.

Pol. T 5.6 Develop enhanced notification and public outreach efforts by SEATRAN for users, businesses, and property owners within the M and I Center prior to final decisions being made on reconstruction of existing facilities or the development of new transportation systems.

Goal T6: Provide Safe Transportation Infrastructure.

Pol. T 6.1 Reduce or eliminate conflicts between travel modes.

Pol. T 6.2 Work with SEATRAN to identify and prioritize intersection improvements at high accident locations.

Goal T7: Improve Rail Operations.

Pol. T 7.1 Increase speed limits imposed on trains to reduce the length of time grade crossings are blocked.

Pol. T 7.2 Improve the speed and reliability of rail operations through rail switching and signal enhancements.

Pol. T 7.3 Grade separate mainline rail crossings through the Duwamish M and I Center to enhance speed and reliability for passenger and freight rail operations.

Pol. T 7.4 Maintain access to local spur rail lines.

Goal T8: Increase the Use of Public Transportation.

Pol. T 8.1 The City should provide assistance and encourage voluntary participation in Commute Trip Reduction (CTR) programs within the M and I Center through improvements to transit service, employer pass subsidies, and encouragement of carpool and vanpool use.

Pol. T 8.2 Encourage King County-Metro to improve transit service for moving employees to and throughout the M and I Center.

Pol. T 8.3 Ensure that any development of light rail facilities in the vicinity of Lander Street, or elsewhere within the M and I Center, does not adversely impact truck and rail mobility or access to local businesses and property, or if impacts occur, they are appropriately mitigated.

Pol. T 8.4 Ensure that the expansion of the King County-Metro Ryerson Base, or any other transit-related facilities within the M and I Center, does not adversely impact truck and rail mobility or access to local businesses and property.

Goal T9: Maintain International Waterborne Transportation *Facilities.*

Pol. T 9.1 Maintain the Duwamish Waterway and Elliot Bay as waterways for waterborne goods movement and maintain deep harbor docking space in Elliot Bay.

Pol. T 9.2 Maintain convenient waterborne and roadway access to all existing and expanded seaport facilities to ensure that the M and I Center maintains its role as a vital west coast port facility.

Pol. T 9.3 Maintain and improve intermodal connections for waterborne freight.

Pol. T 9.4 Consistent with Federal law, maintain priority access for waterborne freight through the Duwamish Waterway over general vehicular bridge traffic.

*Goal **T10:** Maintain and Expand Goods Movement via Air.*

Pol. T 10.1 Preserve access for air cargo and air operators at the King County Airport.

Pol. T 10.2 Work with King County to maintain or expand air capacity at the King County Airport.

Recommended Actions/Strategies

Transportation Investments

Given the complex mixture of land uses, transportation systems, and modal needs within the M and I Center, the consideration of strategic investment in specific improvements is of paramount importance to the continued economic health of this area. While the movement of freight and goods throughout the area is of critical importance to the region's economy, the GDPC recognizes that a successful transportation plan must also accommodate many of the other transportation needs within and through this industrial district. The following pages outline GDPC recommended transportation investments in capital projects, operation and maintenance programs, and safety improvements for the M and I Center.

While several of these projects have secured funding sources to implement them, funding mechanisms are not in place to implement all of them. Funding and implementation strategies were developed by the GDPC to guide the successful implementation of this element as well as support the economic and land use elements of the Plan.

The top 10 capital investment priorities are:

1. SR 519 Intermodal Access Project Phase 1 (Atlantic Street grade separation) and Phase 2 (Royal Brougham grade separation),
2. Lander Street grade separation,
3. East Marginal Way grade separation south of Spokane Street,
4. Southbound on-ramp to SR 99 at or north of Royal Brougham,
5. SR 99 Northbound on-ramp at Hanford Street,
6. Preserve and/or replace the South Park Bridge (14th/16th Avenue S), as structural integrity warrants,
7. Hanford Street overcrossing and grade separation from Hanford T-ramp across to east side of railroad,
8. Off-mainline rail improvements south of Spokane Street,
9. Spokane Street Viaduct Widening in conjunction with Lander Street grade separation, and
10. Holgate Street grade separation.

Matrix of Capital, Operation and Maintenance Recommendations

The following matrix identifies the recommended capital, operation and maintenance actions which will implement the M and I Center Plan.

Table 4-1: Recommended Transportation **Investments**

Project Type/ Ranking	Issues Addressed	Transportation Improvement	Description	Rationale	GDPC Comments
Capital 1 Phase 1	Regional Circulation Grade eparation of ast-west rterials	**GDPC 3: SR 519** ntermodal Access Project Phase 1, Atlantic Street grade separation. Reference Code: AD1-4)	Grade separate Atlantic Street iom 1st to 4th Avenues, construct on-ramps to I-90. Jehicular movement would b me-way eastbound once Phas I is complete. Phase I initially vould result in two-way traffic on the Atlantic Street grade eparation.	• Significantly improves access/egress to freeway systen from northern Duwamish area and special event facilities. Most effective once Phase II is completed of the SR 519 project. Improves access to Port container facilities. Would reduce traffic on Royal Brougham by shifting some freeway-bound traffic to Atlantic Street. Grade separation of M and I Center addresses east-west access issues	Increases regional traffic on 1st and 4th Avenues. Does not address east-west access issues for the study area south of the Stadiums.
Capital 1 Phase 2	Regional Circulation Grade eparation of mast-west rterials	**GDPC 5: SR** 519 ntermodal Access Phase 2, grade eparate Royal Brougham. Reference Code: AD2-1)	Grade separate Royal Brougham between I-90 ramp nd Occidental, modify 4th Avenue on/off ramps. Jehicular movement would b me-way westbound. Provision for at-grade left- uming movements from Royal Brougham to 1st Avenue S must be maintained in ksign for truck movement nd local access needs.	Significantly improves access/egress to freeway systen from northern Duwamish area and special event facilities. Improves access to Port container facilities. Eliminates railroad grade crossing conflicts on Royal Brougham reducing vehicle delay by an average of 4 minutes per vehicle when train movements occur. An additional reduction in vehicle delay would result through elimination of signalized intersection movements that are currently required to access the 4th Avenue S freeway ramps from Royal Brougham. This reduction in vehicle delay is estimated at an additional 30 seconds in westbound egress and an additional 60 seconds in access to the 4th Avenue S freeway ramps.	The second phase needs to be built out as expeditiously as possible since delays will cause negative transportation impacts.
Capital *2*	Local Circulatior Grade eparation of ocal east-west corridors.	**GDPC 11:** Lander grade separation: Reference Code: AD2-3)	Grade separate Lander Street across railroad tracks from 1st o 4th Avenues.	• Provides grade-separated crossing of railroad tracks in a central location within the north M and I Center, reducin delays for east-west traffic. • Provides for mitigation to address access issues with the planned m-development of the Spokane Street Viaduct (Capital 10).	If only one grade-separated facility is constructed, it would draw traffic from the industrial area between Atlantic Street and the Spokane Street Viaduct during rail crossings.
Capital *3*	Regional Circulation mprove access between local roadways and existing/new freeway systems.	**GDPC 9:** East Marginal Way grade separation south of Spokane Street. (Reference Code: AD1-9) northbound overpass and southbound on-ramp to SR 99.	Construct northbound overpass to East Marginal Wa md Southbound on-ramp to SR 99 to grade separate E Marginal Way and Harbor sland lead track.	• Improves mobility for freight and goods. • Improves rail operational efficiency and eliminates at-grade conflicts.	

Table **4-1:** Recommended Transportation **Investments**

Project Type/ Ranking	Issues Addressed	Transportation Improvement	Description	Rationale	GDPC Comments
Capital 4	Local Circulation Improve access between local roadways and existing/new freeway systems.	GDPC 10: SR 99 half-interchange. (Reference Code: AD2-2) southbound on-ramp at or north of Royal Brougham	Construct southbound on-ramp to SR 99 at or north of Royal Brougham to provide a direct connection between Alaskan Way viaduct and loca businesses.	• Provides an alternative route from the North Duwamish without disruption to local trips. • Allows improved access for local business and Stadium activities. • Wii decrease traffic on 1" south of Atlantic. . Northerly location removes downtown commuter traffic from industrial area	
Capital 5	Local Circulation Improve access between local roadways and existing/new Freeway systems. Grade separation of local east-west corridors.	GDPC 13a: Hanford T ramps to SR 99: (Reference Code: AD2-5) northbound on-ramp	C[illegible]s northbound on-r[illegible] at Hanford Street, grade s[illegible]rate Hanford across r[illegible]oad tracks to Utah A[illegible]nue.	• Hanford Street is centrally located within the Industrial District, would serve the needs of the neighborhood and would provide adequate stadium access.	May adversely impact access to businesses and properties, includin the BNSF SIG yard.
Capital 6	Local Circulation Improve access between local roadways and existing/new freeway systems.	Preserve and/or replace, as structural integrity warrants, the South Park Bridge (14^{th}/16^{th} Avenue S).	As necessary, through replacement or rehabilitation maintain existing capacity and function of South Park Bridge (14^{th}/16^{th} Avenue S).	• Maintains vital access across the Duwamish Waterway for local and regional trips.	Sign&cant short-term construction impacts may occur as a result of any rehabilitation or replacement.
Capital 7	Local Circulation Grade reparation of local east-west corridors.	GDPC 12: Hanford Street overcrossing and extension: (Reference Code: iD2-4)	Grade separate Hanford Stree across railroad tracks from 1^{st} to 4^{th} Avenues, extend across Union Pacific tracks to 6" Avenue.	• Provides grade-separated crossing of railroad tracks in a central location within the north M and I Center, reducing delays for east-west traffic.	If only one grade-separated facility is constructed, it would draw traffic from the industrial area between Atlantic Street and the Spokane Street Viaduct during rail crossings.
Capital 8	Enhance rail infrastructure to maintain efficient operation.	GDPC 23: Off-mainline rail improvements. (Reference Code: AD1-10)	Realign tracks along Duwamish Avenue beneath East Marginal Grade Separation. Tied into AD1-9.	• Reduces grade crossing delays on E Marginal Way from increasing train traffic to Terminal 5, Harbor Island, and West Seattle Businesses on West Marginal Way. • Improves efficiency of UP and BNSF rail systems	

Table 4-1: Recommended Transportation Investments

Project Type/ Ranking	Issues Addressed	Transportation Improvement	Description	Rationale	GDPC Comments
Capital 9	Regional Circulation Safety	GDPC 59 : Spokane Street Widening. Reference Codes: AD1-8. and AD1-12)	Widen viaduct lanes to 12 feet add 32" barrier in center, construct new westbound on/off ramps at 1" Avenue.	Improves safety of limited access operation. Eliminate inadequate weaving areas and ramp junctions. Provides for a center barrier to reduce the potential for head-on collisions. Reduce delays for vehicles exiting I-5 to westbound Spokane Viaduct Reduces delays for vehicles traveling from southbound 1" Avenue to westbound Viaduct. Strengthens viaduct to withstand major earthquake.	• May increase commuter traffic on 1st Avenue due to reduction in delay at Viaduct on-ramp. • Increased access time for businesses located south of the Viaduct, who would have to travel as far north as Lander Street and then back south on 1st Avenue to access the Viaduct westbound. • Would likely increase traffic volume on 1st Avenue north of viaduct • Lander grade separation (Capital 3) would mitigate decreased access as a result of the Spokane Street access changes.
Capital 10	Local Circulation Grade Separation of local east-west corridors.	GDPC 11: Holgate grade separation: Reference Code: AD2-3)	Grade separate Holgate Street across railroad tracks from 1st to 4th Avenues.	provides grade-separated crossing of railroad tracks in a central location within the north M and I Center, reducing delays for east-west traffic.	• If only one grade-separated facility is constructed, it would draw traffic from the industrial area between Atlantic Street and the Spokane Street Viaduct during rail crossings.
Capital 11	Local Circulation Improve access between local roadways and existing/new freeway systems.	GDPC 17: Remote holding area for Colman ferry terminal. Reference Code: WSF-1)	Use WOSCA site as remote holding facility for ferry traffic at Colman dock, routing ferry traffic to dock via Alaskan Way.	Would reduce future queuing and congestion in the vicinity of Colman dock.	• This project site is set aside for transportation purposes only. No additional land uses should be developed on the site that conflict with the transportation enhancements that the site is intended for.
Capital 12	Local Circulation Improve access between local roadways and existing/new freeway systems.	GDPC 1: Alaskan Way Realignment under viaduct to accommodate SR 519 improvement. Reference Code: AD1-1)	Move BNSF rail spur 30 feet west to provide downtown waterfront access unimpeded by rail operations and improve local surface streets accessing the Atlantic Street grade separation.	Separates waterfront traffic from railroad tracks (rail activity across Royal Broughan between 1" and Alaskan Way is projected to increase.) Improves port access by separating port/rail yard truck traffic from general traffic	• Indirect routing from I-5/90 to the south on East Marginal Way • Closes Atlantic Street access to waterfront. • Circulation improvements appear to benefit traffic destined for downtown and waterfront, rather than industrial area traffic.
Capital 13	Local Circulation Improve access between local roadways and existing/new freeway systems.	GDPC 6: S Boeing Access Road interchange. Reference Code: CIP-7)	Improve access to I-5 from S Boeing Access Road, Airport Way, and Martin Luther Ring Jr. Way through reconfiguration of interchange.		

Table 4-1: Recommended Transportation Investments

Project Type/ Ranking	Issues Addressed	Transportation Improvement	Description	Rationale	GDPC Comments
Pavement Management and Drainage					
O and M	Pavement Maintenance and Drainage Program. Maintain roadways within Greater Duwamish area to allow for safe passage of vehicles, pedestrians, and goods movement.	**GDPC 27:** Repair existing roadway surfaces where failures may cause harm to vehicles or pedestrians and install surface water drainage systems to ensure longevity of street infrastructure. (Reference Code: G-1)	Repair significant arterial pavement failures throughout the M and I Center. Projects include: North Duwamish Horton between 4th Avenue S and East Marginal Way, lander Street between 1" Avenue and 4th Avenue, rail crossings along the entire length of Holgate and on Occidental and Stacy, Occidential from Lander to Horton, the entire length of Spokane Street to Airport Wa including rail crossings, and 6th Avenue S (shoulders) from Massachusetts to Lander. Georgetown 4th Avenue S at S Michigan Street, 3rd Avenue S; betweer S Dawson Street and S Lucile Street, S Fidalgo Street; between 1st Avenue S and 4th Avenue S, and S Hudson Stree at 1st Avenue S. South Park All streets bounded by 7" Ave S, SR 99, the Duwamish Waterway, and Southern Street	• Improves safety, structural integrity, and visual character of the roadway systems in M and I Center • Would significantly increase the durability and life expectancy of pavement structures through this district and likely "pay for itself' over time as pavement rehabilitation needs diminish	• Lack of communication in the past has resulted in non-critical areas within the M and I Center being re-paved while significant street failures remain un-addressed. • May require local funding by business/property owners to achieve improvements on a areawide basis
O and M	Pavement Management Program	**GDPC 28:** In coordination with SEATRANS, establish a program that identifies localized maintenance and preservation of public roadways and sidewalks within the M and I Center. (Reference Code: G-18)	Business and community representatives should review and evaluate with City staff th need to evaluate and improve on roadway maintenance anc preservation issues. Explore the need to initiate a local improvement district or othe such funding mechanism to fund existing and future pavement, drainage, and sidewalk issues.	A concentrated effort by City and community stakeholders could mutually benefit the transportation infrastructure needs.	• Additional taxes or costs born by property owners in M and I Center.
Truck Mobility					
O and M	Improve local circulation for truck movements.	GDPC 20: Improve intersection of S Corson Avenue and S Michigan Street for truck turning movements. (Reference Code: G-11)	Improve turning radii for northbound and southbound turn movements onto freeway.	• Improves truck circulation an access to freeway for freight and goods movement. • Imnroves local circulation for freight and goods	• Encourages truc use on a non-Major Truck Street that is fronted by residential uses on one side.
O and M	Improve local circulation for truck movements.	**GDPC 18:** Provide direct access to 4th Avenue S from heavy industrial properties south of East Marginal Way. (Reference Code: G-4)	Improve signal and lane assignments to allow for direct movements from S River Street to 4th Avenue S across E Marginal Way to reduce circuitous routing.	• Improves local and regional freight and goods mobility. • Improves access onto E Marginal Way and 4th Avenue S from industrial properties west of East Marginal Way.	

Table 4-1: Recommended Transportation **Investments**

Project Type/ Ranking	Issues Addressed	Transportation Improvement	Description	Rationale	GDPC Comments
Truck Mobility					
O and M	mprove access etween local ndustrial listricts and egional reeway/arterial ystems for truck novements	Develop truck corridor through he Riverside ndustrial District n South Park etween SR 99 and .4th Avenue ;/South Park Bridge.	Acquire right-of-way, and improve streets to truck/commercial street standards for cross-section, pavement structure, and drainage on the following route segments: • S Holden Street -from SR 509 to 5th Avenue S • Holden alignment east of 5th Avenue S to Riverside Drive/8th Avenue S • Dallas Avenue S/10th Avenue S from 14th Avenue S to S Kenyon Street. If this route is not feasible, develop improve Kenyon Street between 7th and 8th Avenue S.	Improves safety and access for commercial vehicles, employees and business traffic into South Park Industrial Area 1 via SR 509 and SR 99. Eliminates the need to improve S Kenyon Street for local truck mobility. Provides for a better, more direct truck route through the Riversidt Industrial District than the default Kenyon route.	Property acquisition required to provide a direct truck route between SR 99 and th South Park bridge.
O and M	Truck Mobility mprove local irculation for ruck novements.	GDPC 57 : ntersection Turning Radius mprovements.	The Committee recommends improvements to intersections where truck turning movements are Impeded due to insufficient turning radii. Georgetown Make turning radii improvements at S Michigan/S Bailey and E Marginal Way along Corson Ave for trucks through channelization improvements and minor ROW acquisitions South Park Improve the intersection of Dallas Ave S and 14th Ave S; signalize, re-channelize intersection, consider turning restrictions, and improve turning radii at intersection, time progressive movements in 14th Ave S corridor with bridge openings, and signals to the south.	• Improves local and regional freight and goods mobility for trucks.	
ast-West	*Mobility and C*	neral *Access to Regional Facilities*			
O and M	.ocal Circulatio mprove east vest and north-outh mobility or vehicles, reight, and oods novement.	GDPC 2: Jpgrades to Airport Way. Reference Code: AD1-3 and G-7)	TSM measures to increase efficiency and traffic volume capacity on Airport Way. Most importantly, improvements are need to access Airport Way from 4th Avenue S; significant enhancement to left turning movements from 4th Avenue S onto Airport Way with signage is a key element to success of future use of the Airport Way corridor. Other TSM measure. could include parking configuration/ management, shoulder improvements, channelization improvement: integrating traffic signals into railroad crossing signals system, coordinating/ interconnecting east-west traffic signals on major arterials such as Holgate, Lander, and Royal Brougham.	• Improves a corridor that is currently underutilized for both local and regional trips. • Would divert traffic from other congested corridors (I-5, 4th Ave, 6th Ave). • Supports Duwamish Coalition's recommendations for improving goods movement. • Provides an alternative corridor to 1st Avenue/4th Avenue between Georgetown and the North Duwamish/Seattle CBD.	May displace some on-street parking capacity. Displacement should only be allowed where off-street parking is available.

Table 4-1: Recommended Transportation ***Investments***

Project Type/ Ranking	Issues Addressed	Transportation Improvement	Description	Rationale	GDPC Comments
East- West Mobility and General Access to Regional Facilities					
0 and M	Safety issues or high collision locations	GDPC 29. 30, 32, 60 : Review and evaluate vehicular and pedestrian safety at critical intersections and substandard streets within the M and I Center. (Reference Code: G-3, G5, G-2)	Conduct a detailed review along 4th Avenue S and 6th Avenue South and evaluate access management, parking management and organization, channelization and other safety issues to address safety, access to/from 4th Avenue S and parking.	• Provides direction to the City and local property owners to improve parking, access, and safety conditions along arterials and associated responsibilities. • Provides input as to key pedestrian crossings of 4th Avenue S. * Improves safety of intersections. • Adds additional awareness to other illegal parking activities in the general vicinity. • Organized parking for employees and guests during peak periods. • Improved safety for pedestrians.	
0 and M	Local Access to Regional Transportation Facilities	At critical locations throughout the M and I Center, implement operational, minor capital, and safety measures to improve local accessibility to regional transportation facilities.	• In North Duwamish subarea, convert existing protected left turn signals on major east-west arterials to protected plus permitted signalswith flashingyellow to maintain mobility and access via Holgate and other major arterials onto 1" Avenue S, 4th Avenue S • 8th Avenue S/Cloverdale Street intersection. Convert to fully actuated signal or semi-actuated during off-peak travel periods • Cloverdale Street and SR 99 northbound on-ramp. Improve signage, lighting, turning radius, and acceleration length at this regional freeway access ramp. • Intersection improvements to enhance capacity and operation of 16th Avenue S and E Marginal Way. Through intersection approach widening, signal improvements or other treatments, enhance intersection capacity and improve truck turning radii. Addressimprovementsin conjunction with South Park Bridge (14th/16th Avenue S) preservation. • S 96th Street from SR 509 to SR 99.Widen this street segment to truck/commercial street standards for cross-section, pavement structure, and drainage, accommodate for large turning movements to enhance truck route mobility in northern industrial area of South Park.	• Minimizes minor street delay through signal enhancements. * Improves safety, operation and visibility at this access ramp to the regional freeway system. • Improves safety and access for commercial vehicles, employees and business traffic into South Park Industrial Area 3 via SR 99. • Will require intejurisdiction coordination in many instances in the South Park subarea given existing boundaries of Seattle city limits, Tukwila city limits and unincorporated areas of Ring County.	

Table **4-1:** Recommended Transportation **Investments**

Project Type/ Ranking	Issues Addressed	Transportation Improvement	Description	Rationale	GDPC Comments
Advanced	*Technology*				
0 and M	Install Intelligent Transportation Systems and Real-Time Traveler Information for Major Through Corridors in Greater Duwamish	GDPC 54: Automated travel signs and VMS technology at key points in arterial and freeway system. (Reference Code: AD1-6, S-4, G-15)	• Install and link with the WSDOT VMS current systems to provide traveler information on alternative routes and possible delays to between the Alaskan Way viaduct and I-5 alternative freeway corridors • Interconnection of area traffic signals • Upgrading of traffic signal systems and controllers • Potential establishment of advanced warning and information control systems from railroad control centers for notification of long freight train movements, predicted arrival and duration of grade crossing closures. • Automated traffic signal systems that respond to traffic pattern fluctuationsand closures of at-grade rail crossings, bridge raisings, and other occurrences • Improved system surveillance including CCTV, video detection and other detection sensors for traffic management purposes • Development of mechanisms to disseminate real-time traffic conditioninformation • Joint industry/City program to educate area businesses, shippers, dispatchers, and drivers on how to use advanced traveler information to reduce overall traffic congestion. • Participation in the Washington State led effort to implement a commercial vehicle information system and network (CVISN) to improve the efficiency and effectiveness of commercial vehicle regulation and enforcement for both government and the trucking industry.	• Provides travelers with delay information on regional route choices through Greater Duwamish. • Improves general mobility in the region. • Improved traffic control strategies will result in better traffic flow and increased freight mobility. • Real time information concerning traffic conditions will allow traverlers, truck drivers, and dispatchers to make more informed routing decisions and thus reduce area congestion. • Cost savings to industry and shippers from reduced delays and regulatory efficiencies.	• Provi es trave ers with delay information on routes through the Duwamish. • Improves general mobility in the region.
parking Management					
0 and M	Parking Management Plan in Vicinity of Stadiums and other Event Centers	GDPC 58: On Street Parking Management in the vicinity of special event facilities in cooperation with local businesses and property owners.	• The Committee supports initiating a new parking management plan for on-street in coordination with the Stadium plans and new exhibition center. • An inadequate parking supply, illegal and unsafe parking withinpublic ROW creates conflicts on-street and off-street in the vici nity of th e Seattle Design/Gift Center. Address the interaction between moving vehicles, parked vehicles, and pedestrians.	• Reduces parking impacts to local business during typical day operation of the exhibition center and major event days at either the Seahawks or Mariners stadium. • Improved safety and access. • Organized parking for employees and guests during peak periods. • Improved safety for pedestrians that access parking for area businesses.	

Table 4-1: Recommended Transportation Investments

Project Type/ ingik	Issues Addressed	Transportation Improvement	Description	Rationale	GDPC Comments
Transit and Passenger Rail Operations					
O and M	General Transit	GDPC 46, 47, 62 : Local Transit Service in M and I Center. (Reference Code: DCS-1, DCS-2, G-14, G-15)	Local transit service/operational improvements include: • Develop local circulation mute to serve the north Duwamish area connecting the SODO, stadiums and Pioneer Square to regional transportation systems • Develop a fixed mute or flexibl circulator shuttle between M and I Center and the Beacon Hill neighborhood • Implement an employee shuttle from the future Boeing Access Intermodal terminal to the South Park industrial area • Implement use ofsmaller 25-foot shuttle buses to serve transit needs in South Park. • As part of 14th Avenue corrido urban accessibility treatments, provide a sheltered passenger transfer/waiting area for transit patrons, off-street parking amenities, and bus pullouts.	· Provides an opportunity to reduce commute, shopping, and travel related to major events in the northern Duwamish area.	
O and M	nhance rail nfrastructure to naintain fficient peration.	GDPC 25: Minimize conflicts between rail/roadway at S Lucile Street and Airport Way. (Reference Code: G-17)	Explore the feasibility of signals on Airport Way and 4' Avenue South that alert vehicles when trains are blocking the Lucile Street crossing.	Allows for development of S Lucile Street as an alternative east-west corridor accessing I-5.	May affect local distribution/operati ons at Argo Yards or impact other rail users in the area.
ndustrial/Business District Identifiers					
O and M	Support the Designation of District Identities and :oute Signage t ocal Business nd Industrial reas	**G D P C 42, 56: Support the development of district/industrial/** business activity centers within the M and I area through signage and/or urban design treatments for identification, circulatory routes, or parking areas. Implement signage on I-5, SR 99, SR 509, Alaskan Way Viaduct, Spokane Street Bridge, and other regional freeway systems for exit directions and on local arterials from the freeway ramps install directional signage in combination with the "district" identifiers. (Reference Code: G-10, G-12)	Sodo Business Center: Design District in Georgetown : Review and implement Improvements consisting of sidewalk enhancements, marked crossing locations, signage, and other visibility enhancement for pedestrian circulation. Implement signage on 1-5 for exit directions and on local arterials from the freeway ramps install directional signage in combination with the "district" identifiers. South Park Industrial Districts: Create an identity for local business and outside patrons to industrial businesses within South Park through directional signage and boundary identification of business/industrial districts. District areas include Riverside, Marine. Boulevard, Cloverdale, and Hillside.	Assists in local circulation between Design District and I-5 for in-frequent travelers to the area. Provides an identity to the district areas through boundary definition with signage on arterial roadways. • Improves local truck route circulation within the M and I Center. • Increase the visibility of pedestrian facilities and use. Improve safety of pedestrian circulation. Assists in local circulation between district areas and regional freeway systems for in frequent travelers to the area. Provides an identity to the district areas through boundary definition with signage on arterial roadways.	

Table 4-1: Recommended Transportation Investments

Project Type/ Ranking	Issues Addressed	Transport&ion Improvement	Description	Rationale	GDPC Comments
Nonmotorized Facilities					
O and M	mprove onmotorized acilities	GDPC 34, 36, 44: Identify improvements to bike facilities throughout the M and I Center that separate truck and vehicular traffic from bike travel. (Reference Code: AD1-11, CIP-5, G-21)	Replace the existing separated bike trail along East Marginal Way through construction of a new facility on the east side of this roadway. Complete West Marginal Way trail to West Seattle. Completion of the Sound-to-Mountain trail should be implemented in the Royal Brougham corridor only in conjunction with SR 519 Phase II.	• The GDPC recommends that any bicycle facilities include stop or yield signs at major truck access points that give priority to trucks. • Opportunity to improve safety for bicyclists through industrial area. • Reduces potential for conflicts between nonmotorized and vehicular modes.	• Interaction of bicycles and trucks creates significant safety issues
O and M	edestrian ccess and irculation in icinity of pecial Event acilities	GDPC 33, 37, 38, 39, 41. 40, 43: Implement and prioritize pedestrian crossing treatments in the M and I Center to reduce or eliminate conflicts with vehicular traffic and goods mobility	Construct pedestrian improvements along Occidental Avenue, designate as pedestrian corridor for ballpark and stadium pedestrian traffic. Other crossing treatments include: • New signal at S Fidalgo Street/4th Avenue S. • Improved signage/pavemen markings of existing crossin facilities. • Pedestrian overpass over railroad tracks between Kingdome and 4th Avenue. • Pedestrian overpass over railroad tracks between Mariners Ballpark and 4th Avenue.	• Provides a pedestrian-only corridor to accommodate major pedestrian flows during events. • Increase the visibility of pedestrian facilities and use. • Improve safety of pedestrian circulation. • Separates pedestrian flow from heavy vehicular movements. • Reduces delay of an at-grade crossing for both pedestrians and vehicles.	SEATRAN s proposal 0 eliminate one orthbound travel ane between Royal Brougham and SR 99 orthbound on-ramp ould potentially have ignificant impacts to peration of 1st Avenue S during peak periods nd major events.
Transportation Needs in Transitional Areas					
O and M	Residential uffering.	GDPC 19: Implement traffic management measures in transitional residential/ industrial areas, and through improvements identified in truck circulation and local access to regional facilities, truck impacts would be significantly minimized in residential areas (Reference Code: G-12)	nprove the safety and inimize truck impacts in esidential areas immediately djacent to industrial districts rough traffic management reatments at the following ocations: 8th Avenue S, north of Director Street to Cloverdale 8th Avenue S/9th Avenue S, south of Cloverdale Street to SR 99 Modify S Corson Avenue between S Michigan Street and E Marginal Way to provide buffer zone between the roadway and the residential neighborhood.		Current proposal on Corson Avenue does not appear to provide buffer zone for residents. It does not appear to provide any benefit to neighborhood. SEATRAN proposes to narrow lanes and restripe roadway to provide a buffer zone, but only along an portion of the road that is primarily industrial or undeveloped.